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Article

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How AI-related drivers stimulate digital social entrepreneurship: An integrated framework of entrepreneurial event model within stimulus-organism-response theory[☆]

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ABSTRACT

Drawing on an integrated framework of the Entrepreneurial Event Model (EEM) and the Stimulus-Organism-Response (SOR) theory, this study investigates how AI-driven stimuli—specifically ChatGPT adoption and perceived AI competencies—influence individuals' cognitive perceptions (perceived feasibility and perceived desirability) and, in turn, their intentions to engage in digital social entrepreneurship. Employing a stratified sample of 986 students in Vietnam, we applied multiple linear regression and response surface analysis to test the proposed hypotheses. Findings reveal that both ChatGPT adoption and perceived AI competencies positively impact perceived feasibility and desirability, which independently and interactively drive intentions toward digital social entrepreneurship. Moreover, the congruence and imbalance between feasibility and desirability significantly shape entrepreneurial intentions. This research contributes by advancing an integrated EEM-SOR framework, offering new insights into how cognitive mechanisms operate in AI-driven digital social entrepreneurship. Practical recommendations are proposed for social entrepreneurs, educators, and policymakers seeking to foster AI-enabled social ventures.

1. Introduction

The emergence of new entrepreneurial phenomena is often linked to shifts in economic paradigms and external disruptions (Al Halbusi et al., 2024). The emergence of new entrepreneurial phenomena is often linked to shifts in economic paradigms and external disruptions (Chebo & Dhlwayo, 2024; Tsai et al., 2024). The knowledge-based economy and the sharing economy have further expanded opportunities for entrepreneurial activity grounded in digital connectivity and decentralized collaboration (Bergholz et al., 2024). Social entrepreneurship represents a distinctive form of entrepreneurship that combines social innovation with economic sustainability (Canestrino et al., 2020). Unlike traditional entrepreneurship, which focuses on profit maximization, social entrepreneurship seeks to address societal challenges through entrepreneurial action (Chatterjee et al., 2021).

Digital social entrepreneurship (DSE) extends this mission by leveraging advanced technologies, including artificial intelligence (AI), to increase reach, enhance adaptability, and deliver scalable solutions to social problems (Ibanez et al., 2022). However, limited research has

clarified how emerging technologies, particularly AI and Generative AI (GenAI), specifically shape the pathways and mechanisms behind digital social entrepreneurship (Al Najem & de Vré, 2023). AI has already demonstrated transformational impacts across industries, enabling automation, decision-making support, and operational efficiency (Davidsson & Sufyan, 2023; Roundy, 2022). However, GenAI offers a unique capability: the autonomous creation of new, context-specific content, including text, images, and code (Kanbach et al., 2024). This creative function is particularly crucial for social entrepreneurs, who must continually innovate solutions, mobilize stakeholders, and navigate resource constraints.

While conventional entrepreneurship often focuses on market success, social entrepreneurship demands stakeholder trust, legitimacy building, and sustainable mission-driven solutions (Bacq & Janssen, 2011; Bonfanti et al., 2024). GenAI facilitates these requirements by lowering resource barriers and offering adaptable, real-time creative outputs (Liu & Wang, 2024), making it especially valuable for digital social ventures. Despite growing recognition of AI's impact on entrepreneurship, there remains a knowledge gap regarding how AI and

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GenAI influence individuals' perceptions of feasibility and desirability, specifically toward digital social entrepreneurship, particularly in emerging economies like Vietnam (Huy et al., 2023). Building on the Entrepreneurial Event Model (EEM) (Shapero & Sokol, 1982) and the Stimulus-Organism-Response (SOR) theory (Mehrabian & Russell, 1974), our study examines how AI-driven stimuli—specifically, the adoption of ChatGPT and perceived AI competencies—shape individuals' perceptions of the feasibility and desirability of engaging in digital social entrepreneurship, and how these perceptions influence their entrepreneurial intentions. In short, the research question guiding this study is: Building on EEM and SOR, how do AI-driven stimuli shape individuals' perceived desirability and feasibility of digital social entrepreneurship, and their intention to engage in such endeavors?

The paper is structured as follows: Section 2 reviews the theoretical foundations and develops hypotheses; Section 3 presents the methodology; Section 4 outlines the empirical results; Section 5 discusses the findings; and Section 6 concludes with implications, limitations, and suggestions for future research.

2. Theoretical background and hypotheses

2.1. Digital social entrepreneurship

The field of entrepreneurship has acknowledged two distinct phenomena, including digital entrepreneurial venturing and social entrepreneurial venturing (Yáñez-Valdés et al., 2023). Digital entrepreneurial venturing is characterized by an approach to adopting new products, services, and processes, integrating technology-driven solutions into creative business models (Paul et al., 2023; Shukla et al., 2021; Sufyan et al., 2023), while social entrepreneurial venturing involves initiatives that possess the capacity to tackle social issues (Chiengkul et al., 2023; Duong, 2023; Tran et al., 2023). A social entrepreneur is an individual, or in more collaborative forms of entrepreneurship, a group of individuals, who identify a social need and establish a venture to tackle that need (Geradts & Alt, 2022). Scholars have introduced an alternative framework that incorporates the viewpoints and needs of community-focused groups within the domains of transformative advancements, digital progress, and the start-up journey (Battisti, 2019; Yáñez-Valdés et al., 2023). Various stakeholders—including venture founders, patrons, financiers, and policymakers—have shown keen interest in the convergence of social value creation and digital technologies (Chebo & Dhlwayo, 2024; Nakpodia et al., 2023). They consider this convergence an alternative approach to harnessing scale economics and facilitating broader geographical reach (Yáñez-Valdés et al., 2023). Creating value through this process has opened opportunities for the emergence of digital social entrepreneurship.

Scholars endeavored to introduce a fresh concept, digital social entrepreneurship, within the crossroads of digital initiatives and a social-oriented approach. Indeed, Yáñez-Valdés et al. (2023) stated that digital social entrepreneurship is construed as an entrepreneurial undertaking with social objectives, fashioned by integrating digital technologies into their business models, stemming from the interaction and collaboration among diverse participants, while Battisti (2019) considered digital social entrepreneurship as the interconnections among people who engaged in the innovative process, aiming to reshape technology for addressing social issues and collaboratively generating a social-economic impact. In our study, we adopted the insight from the study of Ghatak et al. (2020), which argues that describe digital social entrepreneurship as a branch of entrepreneurship that embeds technology-driven solutions into its core business strategy, using its capabilities to drive social impact, and positioning it as the next stage in social entrepreneurship. This research focuses on exploring how AI-driven stimuli inspire individuals' intentions toward digital social entrepreneurship.

2.2. Artificial intelligence and digital social entrepreneurship

The term “Industry 4.0” integrates the virtual and real worlds, emphasizing engineering applications like robotics, digitalization, and automation (Virmani et al., 2023). Although academicians have delved into automation using AI since the 1950s through theoretical machine learning models, the recent progress in the Industry 4.0 revolution has provided a platform to transform these theoretical models into practical applications (Giuggioli & Pellegrini, 2022). Emerging technologies, such as AI, big data, cloud computing, and IoT, are central to all Industry 4.0 technological paradigms, which are driving the creation of fresh platforms and a paradigm shift in development, paving the way for the construction of innovation products and services (Duong, 2024). Both academicians and practitioners perceive AI technology as revolutionary, capable of transforming market dynamics, businesses, and industries, catalyzing entrepreneurial pursuits (Abaddi & Al-Shboul, 2023; Roundy, 2022), and inspiring social entrepreneurship and innovation (Chebo & Dhlwayo, 2024; Graham & Bonner, 2024b).

AI impacts entrepreneurship in general by automating decision-making, enhancing operational efficiency, improving customer interactions, and enabling data-driven innovation (Davidsson & Sufyan, 2023; Popkova & Sergi, 2020). Entrepreneurs use AI to optimize resource allocation, refine market strategies, and accelerate product development (Upadhyay et al., 2021). GenAI a specialized branch of AI, brings a distinct capability: the ability to autonomously generate content—such as text, images, or code—tailored to specific contexts (Kanbach et al., 2024). This creative dimension goes beyond automation, offering entrepreneurs new tools for ideation, branding, community engagement, and problem-solving (Wang & Zhang, 2024). GenAI can assist in grant writing, develop targeted marketing campaigns, and customize educational programs, all of which are critical for ventures addressing societal challenges (Liu & Wang, 2024).

While AI enhances efficiency and decision-making in general entrepreneurship, the application of GenAI is particularly crucial for social entrepreneurship. Social entrepreneurs differ from traditional entrepreneurs in that their core objective is not merely economic profit but the pursuit of social impact (Kim et al., 2022). They often face unique challenges—such as limited financial resources, stakeholder diversity, and systemic social problems—which require innovative, cost-effective, and scalable solutions (Kruse et al., 2025). GenAI specifically addresses these challenges by democratizing access to resources, enabling under-represented entrepreneurs to create professional-quality outputs (e.g., proposals, reports, outreach materials) without the need for extensive funding or specialized technical teams (Liu & Wang, 2024). For social entrepreneurs, GenAI facilitates community mobilization, personalized impact communication, and dynamic solution design, thereby amplifying the reach and effectiveness of social ventures.

Moreover, in social entrepreneurship, building trust with beneficiaries, donors, and partners is essential (Al Najem & de Vré, 2023). GenAI's capabilities in crafting personalized narratives and impact storytelling make it a unique asset, enabling social entrepreneurs to connect authentically with diverse audiences (Crumbly et al., 2025). In contrast, traditional entrepreneurship often prioritizes efficiency and market fit over stakeholder relationship-building (Adam & Fayolle, 2015). Thus, social entrepreneurship constitutes a particularly unique setting to examine the transformative effects of GenAI. Unlike traditional startups, social ventures require tools that are not only efficient but also empathetic, inclusive, and adaptable to complex societal needs—areas where GenAI's generative capabilities offer clear advantages. By leveraging GenAI, social entrepreneurs can rapidly prototype and communicate innovative social solutions (Crumbly et al., 2025), tailor interventions to the cultural and emotional contexts of different communities (Mariani & Dwivedi, 2024), and scale social impact across geographies with context-sensitive strategies (Sottini et al., 2022). Consequently, while AI drives efficiency in entrepreneurship broadly (Chalmers et al., 2021; Graham & Bonner, 2024a), GenAI uniquely

enables social entrepreneurs to amplify their social missions through scalable, adaptive, and community-centered innovations. This distinction justifies focusing specifically on digital social entrepreneurship as the context of this study.

2.3. The integrated framework of the entrepreneurial event model within stimulus-organism-response theory

Recent studies highlight the crucial role of intention-based models in investigating the factors that shape intentions to become entrepreneurs (Bachmann et al., 2024; Fox et al., 2023), including intention toward social digital entrepreneurship (Ghatak et al., 2020). These models not only play a crucial role in forecasting the results of intentions by encapsulating enduring trends within individuals over the long term (Tran et al., 2023), but also provide insights into how individuals become conscious of the desirability, feasibility, and opportunities associated with their entrepreneurial endeavors (Duong & Le, 2022). Thus, many complementary “behavioral intention” frameworks have surfaced in the literature, each highlighting a similar array of conceptual constructs (Jiang, 2024). Shapero and Sokol (1982)’s entrepreneurial event model (EEM) remains a foundational theory within the entrepreneurship domain. The EEM posits that the intention to initiate an entrepreneurial event, such as establishing a new venture, necessitates two pivotal antecedents, including perceived feasibility and perceived desirability (Duong & Le, 2022). Perceived desirability is characterized as the extent to which an individual finds the idea of creating their firm attractive (Shapero & Sokol, 1982), while perceived feasibility refers to an individual’s belief in their personal ability to establish and run their own business (Esfandiar et al., 2019). In the entrepreneurial context, individuals must view a business venture as desirable and evaluate it as reasonably feasible, considering their personal abilities and skills (Duong & Le, 2022).

While EEM is instrumental in capturing intention formation (Esfandiar et al., 2019; Nguyen & Nguyen, 2024), its application in understanding AI-related drivers and digital social entrepreneurship requires augmentation. Specifically, EEM does not fully account for the influence of technological stimuli, such as the adoption of generative AI tools like ChatGPT, on cognitive mechanisms (perceived feasibility and desirability). This theoretical limitation necessitates integrating EEM with complementary frameworks to address the multi-layered nature of AI’s impact. Mehrabian and Russell (1974) introduced the SOR paradigm, rooted in environmental psychology (Pham et al., 2024). The SOR approach emphasizes how external conditions act as stimuli (S) that initiate internal cognitive processes or organisms (O), which in turn culminate in behavioral responses (R) (Anwar et al., 2023). In the realm of AI-related factors influencing digital social entrepreneurial intentions, applying this integrated perspective allows a more nuanced examination of how triggers—such as ChatGPT adoption in entrepreneurship and perceived AI capabilities—shape individuals’ cognitive evaluations (e.g., perceived feasibility and desirability) and subsequently guide their actions.

Integrating the SOR framework with the EEM builds on prior research, highlighting their conceptual alignment in explaining how external stimuli influence cognitive and motivational processes (Nguyen & Nguyen, 2024). Although the EEM robustly models entrepreneurial intentions through perceived feasibility and desirability (Ambad & Rafiki, 2025), it underrepresents the role of external factors in shaping these perceptions (Ahuja et al., 2019). By contrast, the SOR framework offers a structured approach to examine how environmental cues—such as new technologies, social influences, or policy shifts—activate internal cognitive and affective mechanisms that drive behavioral outcomes (Tran et al., 2024). Specifically, advanced technologies like GenAI serve as powerful external stimuli that can reshape feasibility and desirability (Duong, 2024), extending the EEM’s explanatory power. This integration is particularly relevant in multi-level contexts, where the diffusion of tools like ChatGPT affects individual self-efficacy (perceived

feasibility) and collective attitudes toward entrepreneurial opportunities (perceived desirability). In turn, the SOR framework accommodates both individual and broader ecosystem-level processes (Haq et al., 2024), complementing the EEM’s focus on intention-based constructs. Finally, the SOR perspective emphasizes the iterative interaction between external stimuli and internal cognition (Pham et al., 2024), illuminating how feasibility and desirability evolve as environmental conditions and technological innovations change. This dynamic view adds a temporal dimension to the EEM’s snapshot-like portrayal of intention formation, thereby offering a richer understanding of how external factors shape entrepreneurial motivations and behaviors.

Within the SOR framework, ChatGPT adoption serves as an external stimulus capable of influencing cognitive evaluations. Integrating ChatGPT into digital social entrepreneurship introduces transformative opportunities for communication, stakeholder engagement, and service innovation (Duong, 2024). ChatGPT’s natural language processing capabilities facilitate rapid information processing, personalized interactions, and real-time feedback (Davidsson & Sufyan, 2023), all crucial in the context of social ventures addressing societal needs. For social entrepreneurs, who must mobilize communities, donors, and partners while operating under constraints, ChatGPT offers a means to scale communication, improve outreach, and enhance perceived operational feasibility. Furthermore, by automating content generation, idea prototyping, and stakeholder dialogue, ChatGPT may increase the desirability of launching ventures aimed at social impact by reducing the perceived emotional and cognitive barriers to entry (Duong, 2025). Thus, individuals adopting ChatGPT may perceive digital social entrepreneurship as both more attainable and more appealing.

H1. ChatGPT adoption in entrepreneurship is positively related to (a) perceived feasibility and (b) perceived desirability.

Perceived AI competencies refer to individuals’ beliefs in AI’s ability to enhance business performance, efficiency, and innovation (Dabbous & Boustani, 2023). Based on the insights from Unified Theory of Acceptance and Use of Technology (Venkatesh et al., 2003), individuals who perceive AI as a competent enabler are likely to recognize how it simplifies complex decision-making, automates routine tasks, and delivers actionable insights (Nguyen et al., 2024). In digital social entrepreneurship, these competencies are particularly salient. Social ventures often operate with limited human and financial capital while addressing complex, multifaceted social problems (Masiero & Ravishankar, 2018). When entrepreneurs perceive AI as capable of automating operations, analyzing large datasets to inform interventions, and enhancing scalability (Yao et al., 2023), they are more likely to view entrepreneurial endeavors as practically feasible. Simultaneously, the association with cutting-edge, socially meaningful technology enhances the perceived desirability of launching digital social ventures, as it aligns with innovation-driven missions and stakeholder expectations for social change (Gao et al., 2023; Moro-Visconti et al., 2023). The following hypotheses are formulated.

H2. Perceived AI competencies are positively related to (a) perceived feasibility and (b) perceived desirability.

The SOR model conceptualizes cognitive evaluations as critical mediators that link external stimuli to behavioral outcomes (Duong, 2024). In the context of digital social entrepreneurship, perceived feasibility and desirability are not merely independent assessments; they serve as psychological bridges, translating exposure to AI tools like ChatGPT and AI competencies into entrepreneurial intentions. Individuals who view digital technologies as feasible for addressing social challenges are more confident in pursuing ventures, recognizing both their technical and operational viability (Ghatak et al., 2020). Meanwhile, desirability reflects emotional and mission-driven resonance, which is especially vital in social entrepreneurship, where personal identification with the cause strengthens commitment (Duong & Le, 2022; Esfandiar et al., 2019). Thus, both perceptions are necessary to channel AI-driven stimuli into a concrete intention to engage in digital social entrepreneurship.

H3. Perceived feasibility and perceived desirability significantly

mediate the relationships between ChatGPT adoption in entrepreneurship, perceived AI competencies, and digital social entrepreneurial intention.

Digital social entrepreneurship requires more than technological feasibility or emotional motivation alone; it demands the alignment of both. Congruence between perceived feasibility and desirability reflects a strong integration between an individual's practical confidence and emotional commitment (Esfandiar et al., 2019; Saeed et al., 2014). This alignment creates a reinforcing cycle, enhancing resilience, persistence, and venture engagement. When both feasibility and desirability are high, potential digital social entrepreneurs are likely to view venture creation as both realistic and personally meaningful, leading to stronger intentions. Conversely, when these perceptions are imbalanced—e.g., high desirability but low feasibility, or vice versa—individuals may experience cognitive dissonance, uncertainty, and hesitation (Duong, 2025). Particularly in social entrepreneurship, where personal sacrifice and resourcefulness are often demanded, misalignment can significantly reduce the likelihood of venture initiation.

H4. Digital social entrepreneurial intention is significantly related to the combined, balanced, and imbalanced levels of perceived feasibility and perceived desirability.

The conceptual framework is shown in Fig. 1.

3. Methods

3.1. Research context

Social enterprise is a relatively new concept in Vietnam, introduced to the country by international non-governmental organizations in the early 2000s (Karlidag-Dennis et al., 2020). It builds upon earlier forms of social entrepreneurship, as seen in the cooperative models that emerged in the country during the 1960s (Duong, 2023). Indeed, the concept of “social entrepreneurship” gained official recognition in 2014 with the enactment of the Enterprise Law, which formally acknowledged social enterprise as a distinct organization type (Do, 2022). Nonetheless, over 50 % of social enterprises in Vietnam choose to register under traditional legal forms, such as limited liability companies or joint stock companies (Nguyen et al., 2021). This preference stems from the belief that registering as a social organization offers few benefits and involves overly complex paperwork (Do, 2022). In Vietnam, a form of social enterprise known as “cooperatives” has existed long before the official legal recognition of social entrepreneurship. Approximately 20,000

registered cooperatives are in the country (Karlidag-Dennis et al., 2020), primarily situated in remote areas, with around 13,000 demonstrating operational activity through tax payments (Nguyen et al., 2021). Moreover, Vietnam's economy is undergoing rapid transformation by adopting new digital technologies (Walsh et al., 2023). Various industries in the country, including e-commerce, tourism, digital content, and fintech, are swiftly digitizing to keep pace with this evolution (Van Tam et al., 2024). Recently, Vietnam has ramped up its AI development and adoption investments, recognizing its pivotal role in driving future technological advancements (Hung, 2023). With this aim, Vietnam is striving to establish itself as a leading hub within the ASEAN region and globally for the research, development, and implementation of AI technologies and applications (Bui & Nguyen, 2023).

Building on this technological transformation, student entrepreneurs in Vietnam can be characterized as digital natives, having grown up during a time of rapid digitalization and widespread internet access (Duong et al., 2024). Their daily exposure to smartphones, digital platforms, and AI-enabled technologies has equipped them with higher digital literacy compared to earlier generations (Pham Tra & Dau Thi Kim, 2024). Unlike older cohorts who often adopt technology reactively, student entrepreneurs are typically proactive users, seamlessly integrating tools like ChatGPT, AI-driven analytics, and digital collaboration platforms into their educational and entrepreneurial activities. This digital fluency positions them uniquely to exploit AI's capabilities not only for business innovation but also for advancing social missions. In the context of digital social entrepreneurship, student entrepreneurs' innate familiarity with generative AI tools enables them to identify social needs more creatively, design technology-based solutions, and scale their social ventures with greater agility (Hao et al., 2024). Their native competence in navigating digital ecosystems makes them ideal actors for studying how AI-driven stimuli influence entrepreneurial cognition and intention in social domains.

3.2. Data collection and sampling

Numerous prior studies have used undergraduate students (student entrepreneurs) as research samples to explore the phenomenon of entrepreneurship instead of employing real-world entrepreneurs (Lopes et al., 2023; Nwosu et al., 2022). This choice is attributed to university student entrepreneurs' frequent inclinations (intentions) toward engaging in entrepreneurial activities (Chahal et al., 2023). As the next generation of entrepreneurs, student entrepreneurs represent an

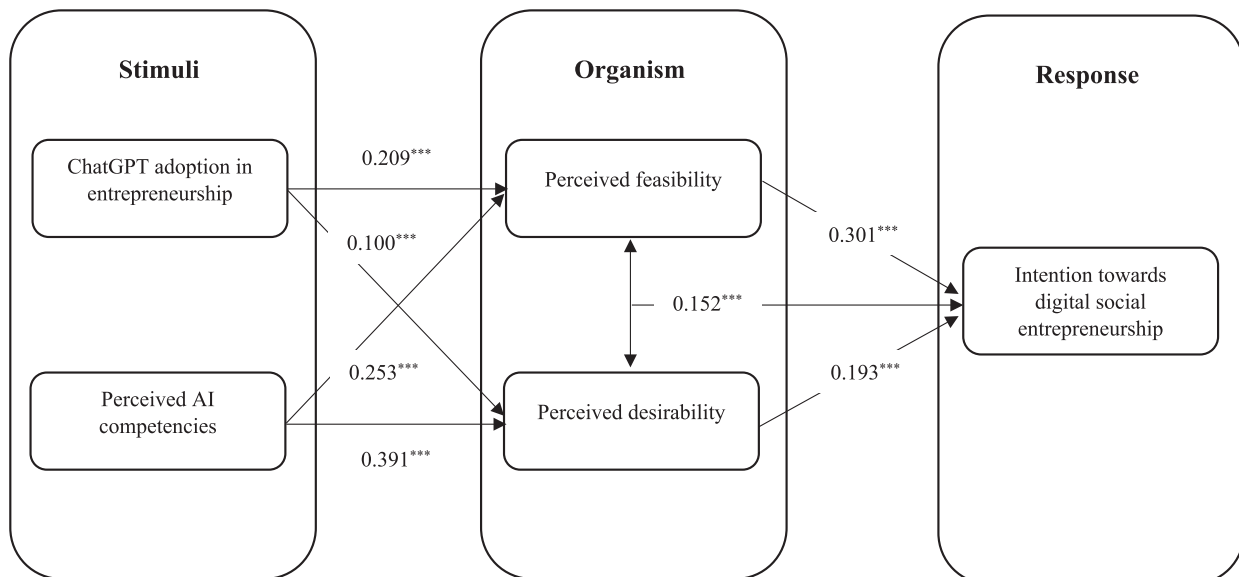


Fig. 1. Conceptual model.

innovative cohort with the potential to drive significant change in social entrepreneurship (Tran et al., 2023). By focusing on student entrepreneurs, thus, we gain insight into their perceptions, attitudes, and aspirations regarding digital social entrepreneurship, which can inform future strategies and initiatives in this rapidly evolving field. In addition, student entrepreneurs often possess a keen interest in leveraging digital technologies for social good (Barboudidis & Stiakakis, 2023), making them particularly relevant for studying the intersection of digital innovation and social impact.

The current study encompassed a cohort of 986 students meticulously selected through a stratified random sampling methodology across nine universities and institutions in Vietnam. The selection process took place over four stages, from December 5, 2023, to January 25, 2024. In the initial phase of participant selection, the study strategically focused on two distinct geographical regions in Vietnam, demarcated by the northern and southern areas, with the boundary delineated in Quang Tri province. A thorough scrutiny of the educational topography revealed the presence of 224 higher education institutions in Vietnam, distributed among the regions with 123 universities in the Northern and 101 in Southern Vietnam (Duong et al., 2023). These academic institutions cater to nearly two million students. During the following phase, a systematic randomization strategy was employed to designate five universities in Northern and four universities in Southern Vietnam. Universities from various geographic regions were selected based on criteria ensuring diverse representation across different population groups. Factors such as geographical location, size, reputation, and academic performance were taken into consideration. The primary criterion for selection was the impact rank from the Webometrics Ranking of Vietnamese Universities (Webometrics, 2023). In the third phase, a sampling methodology was employed to select between two and four classes from each university or institution, depending on their fields of study (majors). In the conclusive phase of the sampling process, potential respondents for the research were enlisted through the direct distribution of questionnaires to student entrepreneurs, facilitated by the collaboration of lecturers and assistants.

Participants were explicitly apprised that their engagement in the survey was entirely voluntary. They were informed that their responses would be handled with confidentiality and security, and the collected data would be used exclusively for academic purposes. Proactive measures were implemented to ensure that respondents understood the essential concepts pertinent to the study, including social entrepreneurship, AI, and the utilization of ChatGPT. Before distributing the survey, respondents were presented with clear definitions of these critical concepts on the first page of the questionnaire. By providing these definitions upfront, we aimed to equip participants with the necessary background knowledge to engage thoughtfully with the survey questions. This preemptive approach facilitated a deeper understanding of the study's focus areas, enabling respondents to provide more informed and accurate responses. A total of 1500 questionnaires were distributed, and 1009 were returned. However, 23 surveys were excluded due to incomplete answers. Accordingly, 986 valid responses were analyzed, representing a response rate of 65.7 %. The sample comprises 51.2 % female students. The sample consisted of a diverse range of age groups, exhibiting varying frequencies across distinct age brackets, with notable age distributions: 17.6 % of participants were aged 18–19, 56.2 % were aged 20–22, and 26.2 % were over the age of 22. Moreover, 55.2 % of students enter the field of “economics and business management” while only 44.8 % of them engage in the field of “engineering and other fields (i.e., information technology, medicine, telecommunication).

3.3. Scales

This investigation employed a cross-sectional design, relying on a self-report questionnaire adapted from previously validated survey items. Respondents' answers were assessed using a 7-point Likert scale, allowing them to provide ratings on a spectrum from 1 (strongly

disagree) to 7 (strongly agree). To measure ChatGPT adoption in entrepreneurship, a set of five items was adopted and slightly modified from the studies of Zaremohzzabieh et al. (2016) and Abdelfattah et al. (2022) to be suited for the digital social entrepreneurship context (i.e., “I use ChatGPT to obtain information on the benefits realized in the digital social entrepreneurship area” and “I obtain information about digital social entrepreneurial opportunities offered by government agencies/ individuals through ChatGPT adoption”). A four-item scale of perceived AI competencies was derived from the research of Ozgen and Baron (2007) (i.e., “AI solutions' knowledge can be used to enhance business activities”, and “AI solutions can help to store large data capacity for business planning”). To measure perceived feasibility (3 items) (i.e., “I am convinced that I can solve societal challenges using technology-driven solutions if I put my mind to it” and “I could figure out a digital way to help solve the problems that society faces”) and perceived desirability (2 items) (i.e., “I find the idea of own business in the area of digital technology in social problems very attractive” and “I find digital social entrepreneurship as a highly desirable career option”), items were adopted from the study of Ghatak et al. (2020). Finally, a set of five items measured for intention toward social digital entrepreneurial intention was adopted and slightly modified from the studies of Tran et al. (2023) and Ghatak et al. (2020) (i.e., “I expect that at some point in the future, I will be involved in launching an organization that aims to solve social problems using digital technology”, and “I have a preliminary idea for a digital social enterprise on which I plan to act in the future”).

4. Results

4.1. Scale evaluation

A battery of tests was performed to examine scales. Initially, the reliability of the scales was assessed utilizing Cronbach's alpha (α) and composite reliability (CR) in the five-factor unbounded model. DSEI3 “I do not plan to start a digital social enterprise” (reverse question) is eliminated from the DSEI construct since its correlated item-total correlation only reached $0.231 < 0.3$ (cut-off value) (Christmann & Van Aelst, 2006). After excluding DSEI3, Table 1 reported that the values of α and CR for all scales surpass the benchmark of 0.7, indicating satisfactory reliability (Hair et al., 2021). Moreover, the five-factor unconstrained model illustrated the excellent indices of fitness: $\chi^2 = 405.418$, $df = 122$, $GFI = 0.955$, $AGFI = 0.937$, $CFI = 0.970$, $TLI = 0.962$, $NFI = 0.957$, and $RMSEA = 0.049$ (see Fig. 2). Second, the scales' convergent validity was examined by the average variance extracted (AVE) and the standardized regression weights of items (λ). The AVE values for all scales surpass the recommended threshold of 0.5, while the λ of items range from 0.640 (DSEI4) to 0.899 (CAE3), affirming satisfactory convergent validity. Furthermore, discriminant validity was examined by comparing the square roots of AVEs with the inter-construct correlations (Hair et al., 2021). Results illustrate that all scales' square roots of AVEs exceed the inter-construct parallel, confirming the scales' discriminant validity.

Precautions were taken throughout the process of collecting and analyzing the datasets to mitigate the potential impacts of common method bias (CMB). This questionnaire survey was structured to ensure a balanced questionnaire format and delivery, thereby minimizing systematic biases that contribute to CMB. Various methods were employed to mitigate possible CMB, including randomizing the order of observed variables. These strategies aimed to reduce systematic biases and enhance the validity of the collected data (Duong, 2024). Additionally, Harman's one-factor test was executed to test the presence of CMB. The analysis validated the presence of five variables, each with eigenvalues exceeding 1.0. The final 18-item measurement model had a maximum variance contribution rate of 33.806 %, which falls below the 50 % threshold, indicating that CMB is not a substantial concern in our study (Podsakoff et al., 2003).

Moreover, in the one-factor model, all items from the five constructs

Table 1
Description and correlations.

Constructs	Mean & SD	μ	χ	α	CR	AVE	1	2	3	4	5	6	7	8
1. Age	2.085 ± 0.657	-0.090	-0.692	—	—	—	—	—	—	—	—	—	—	—
2. Gender	1.488 ± 0.500	0.049	-2.002	—	—	—	-0.071*	—	—	—	—	—	—	—
3. Major	1.552 ± 0.498	-0.208	-1.961	—	—	—	-0.060	0.068*	—	—	—	—	—	—
4. PF	5.259 ± 0.985	-0.484	0.610	0.818	0.822	0.608	-0.016	0.009	0.009	(0.780)	—	—	—	—
5. CAE	4.798 ± 1.135	-0.518	0.610	0.915	0.912	0.676	0.017	-0.052	0.038	0.305**	(0.822)	—	—	—
6. DSEI	4.167 ± 1.126	-0.444	0.465	0.849	0.823	0.541	-0.018	-0.004	0.025	0.358**	0.400**	(0.735)	—	—
7. PD	5.083 ± 0.972	-0.366	0.477	0.752	0.753	0.604	-0.021	-0.019	-0.031	0.434**	0.219**	0.292**	(0.777)	—
8. AIC	5.199 ± 0.985	-0.683	0.911	0.820	0.822	0.536	-0.011	-0.042	-0.036	0.315**	0.263**	0.261**	0.427**	(0.732)

Notes: N = 986. **: p -value < 0.01; μ : Skewness; χ : Kurtosis.

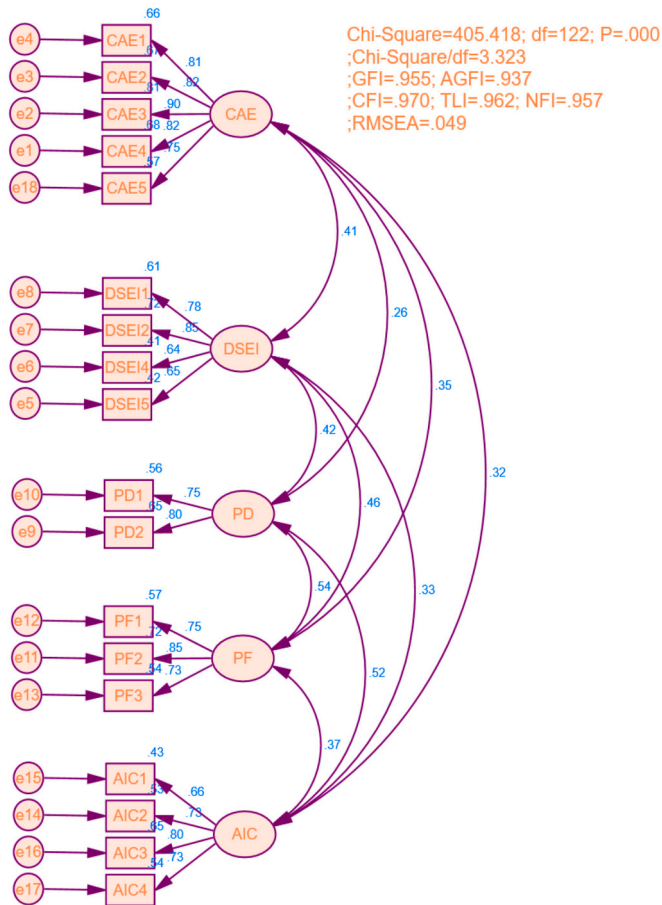


Fig. 2. Unconstrained measurement model.

were constrained, revealing poor indices of fitness: $\chi^2 = 4865.325$, $df = 135$, $GFI = 0.554$, $AGFI = 0.435$, $CFI = 0.492$, $TLI = 0.424$, $NFI = 0.486$, and $RMSEA = 0.189$ whereas the variation in factor loadings was below 0.2 (Min et al., 2016). Table 2 shows that the single-construct strained model also exhibited a poorer fit compared to the five-construct unconstrained model ($\Delta\chi^2$ (df) = 4459.817 (13), p -value < 0.001). Furthermore, academicians recognized that the importance of curvilinear

effects suggests that CMB may not distort the results (Chen et al., 2022). The employment of PRSA in our study reveals noteworthy coefficients for perceived feasibility and perceived desirability on DSEI, indicating that CMB is not a significant concern. It is concluded that CM is not a significant concern in our research.

4.2. Hypothesis testing

Multiple linear regression is initially utilized to test the relationships between AI-driven stimuli and cognitive organisms (perceived feasibility and perceived desirability), with controls for age, gender, and major. Table 3 indicates that ChatGPT adoption in entrepreneurship is positively correlated with both perceived feasibility ($\beta = 0.209$, $t = 7.865$, $p < 0.001$) and perceived desirability ($\beta = 0.100$, $t = 3.915$, $p < 0.001$) while perceived AI competencies were also found to have a positive correlation both perceived feasibility ($\beta = 0.253$, $t = 8.291$, $p < 0.001$) and perceived desirability ($\beta = 0.391$, $t = 13.297$, $p < 0.001$), supporting for H1a, H1b, H2a, and H2b. Table 4 reports that perceived feasibility and perceived desirability have positive relations with digital social entrepreneurial intention ($\beta = 0.301$, $t = 7.864$, $p < 0.001$; $\beta = 0.193$, $t = 5.060$, $p < 0.00$, respectively). Additionally, the results of the PROCESS macro approach for mediation coefficient relationships are illustrated in Table 5. Results reveal that the relationships between ChatGPT adoption in entrepreneurship, perceived AI competencies, and digital social entrepreneurial intention were significantly mediated by perceived feasibility ($\beta_{CAE-PF-DSEI} = 0.062$; 95 % CI [0.066, 0.122]; $\beta_{AIC-PF-DSA} = 0.029$; 95 % CI [0.014, 0.050], respectively) and perceived desirability ($\beta_{CAE-PD-DSEI} = 0.096$; 95 % CI [0.063, 0.132]; $\beta_{AIC-PD-DSA} = 0.060$; 95 % CI [0.024, 0.100], respectively). H3 is thus supported.

Polynomial regression and response surface analysis (PSA) were employed to examine the combined, balanced, and imbalanced influences of perceived feasibility and perceived desirability on digital social entrepreneurial intention (H5). Table 4 summarizes the PSA results, while Fig. 4 provides a visual overview. Specifically, the left portion of Fig. 4 displays the 3D response surface produced by the analysis, and the right portion highlights cross-sections along the perfectly congruent and incongruent lines. Table 4 reveals that perceived desirability interacts with perceived feasibility to increase digital social entrepreneurial intention ($\beta = 0.152$, $t = 3.693$, $p < 0.001$); the plot for the interactive impact is demonstrated in Fig. 3. H5 also supposes that digital social entrepreneurial intention will be higher when the congruence degree of perceived feasibility and perceived desirability is high, compared to when the congruence degree is low.

Table 2
Confirmatory factor analyses.

CFA analyses		χ^2 (df)	GFI	AGFI	CFI	TLI	NFI	RMSEA	$\Delta\chi^2$ (df)
Five-factor model	CAE, DSEI, PD, PF, AIC	405.418 (122)	0.955	0.937	0.970	0.92	0.957	0.049	—
Four-factor model	CAE + DSEI, PD, PF, AIC	2164.030 (129)	0.774	0.701	0.782	0.741	0.771	0.127	1755.612 (7) ***
Three-factor model	CAE + DSEI + PD, PF, AIC	2811.445 (132)	0.719	0.635	0.712	0.667	0.703	0.144	2406.027 (10) ***
Two-factor model	CAE + DSEI + PD + PF, AIC	3737.882 (134)	0.634	0.533	0.613	0.558	0.605	0.165	3332.464 (12) ***
One-factor model	CAE + DSEI + PD + PF + AIC	4865.325 (135)	0.554	0.435	0.492	0.424	0.486	0.189	4459.817 (13) ***

Notes: N = 986. Referenced model: Five-unconstrained variables; *** $p < 0.001$.

Table 3
Regression models.

Variables	Perceived feasibility (PF)				VIF	Perceived desirability (PF)				VIF
	Model 1					Model 2				
	β	SE	t	p-value		β	SE	t	p-value	
Constant	2.880***	0.243	11.869	<0.001		2.691	0.233	11.533	<0.001	
Age	0.060	0.058	1.030	0.303	1.013	0.008	0.056	0.145	0.885	1.013
Gender	−0.022	0.044	−0.500	0.617	1.009	−0.029	0.043	−0.680	0.497	1.009
Major	0.012	0.059	0.197	0.844	1.012	−0.044	0.056	−0.790	0.430	1.012
CAE	0.209***	0.027	7.865	<0.001	1.080	0.100***	0.026	3.915	<0.001	1.080
AIC	0.253***	0.031	8.291	<0.001	1.078	0.391***	0.029	13.297	<0.001	1.078
R ²	0.153					0.195				
Adjusted R ²	0.149					0.191				
F Change	35.533***					47.625***				

Notes: N = 986, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.**Table 4**
Polynomial regression and response surface tests.

Variables	Intention toward digital social entrepreneurship (DSEI)				VIF
	Model 3				
	β	SE	t	p-value	
Constant	0.042	0.185	0.229	0.819	
<i>Controls</i>					
Age	-0.012	0.066	-0.177	0.859	1.012
Gender	-0.010	0.050	-0.207	0.836	1.018
Major	0.065	0.066	0.978	0.328	1.011
<i>Polynomial terms</i>					
ξ_1 : PF	0.301***	0.038	7.864	<0.001	1.317
ξ_2 : PD	0.193***	0.038	5.060	<0.001	1.275
ξ_3 : PF ²	-0.100***	0.028	-3.619	<0.001	1.746
ξ_4 : PF x PD	0.152***	0.041	3.693	<0.001	2.543
ξ_5 : PD ²	-0.074*	0.030	-2.456	0.014	1.842
R ²	0.168				
Adjusted R ²	0.161				
F Change	24.671***				
<i>RSAP testing</i>					
Alignment line (PF = PD)					
σ_1 : Slope ($\xi_1 + \xi_2$)	0.490***	0.030	16.578	<0.001	
σ_2 : Curvature ($\xi_3 + \xi_4 + \xi_5$)	-0.020	0.040	-0.595	0.552	
Imbalanced line (PF = -PD)					
σ_3 : Slope ($\xi_1 - \xi_2$)	0.110	0.070	1.545	0.124	
σ_4 : Curvature ($\xi_3 - \xi_4 + \xi_5$)	-0.330**	0.010	-3.369	0.001	

Notes: N = 986, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.**Table 5**
Indirect paths.

Indirect influences				Estimates	BootSE	Bootstrapping 95 % CIs		
						LLCI	ULCI	
CAE	→	PF	→	DSEI	0.062	0.014	0.066	0.122
CAE	→	PD	→	DSEI	0.029	0.009	0.014	0.050
AIC	→	PF	→	DSEI	0.096	0.017	0.063	0.132
AIC	→	PD	→	DSEI	0.060	0.019	0.024	0.100

Notes: N = 986.

Results reveal that the slope of digital social entrepreneurial intention along the perfect congruence is significantly positive ($\sigma_1 = 0.490$, $p < 0.001$) while the curvature is non-significant ($\sigma_2 = -0.020$, $p > 0.05$). This indicates that when perceived feasibility and perceived desirability are in balance, digital social entrepreneurial intention increases as both perceived feasibility and perceived desirability increase. In Fig. 4, the highest level of digital social entrepreneurial intention is located at the back corner of the graph, where both perceived feasibility and perceived desirability are high, and the lowest level is situated at the front of the graph, where both perceived feasibility and perceived desirability are low. The level of digital social entrepreneurial intentions thus decreases

as the incongruence between perceived feasibility and perceived desirability increases in either direction. The interpretation of how the degree of discrepancy between perceived feasibility and perceived desirability relates to the outcome variable (digital social entrepreneurial intention) involves assessing the curvature along the line of incongruence (PF = -PD) with the coefficient σ_4 . A significant negative coefficient σ_4 indicates a concave surface, suggesting that digital social entrepreneurial intention decreases sharply as the degree of discrepancy between perceived feasibility and perceived desirability increases. Fig. 4 illustrates the outcomes of the degree of discrepancy. The graph indicates that perceived feasibility and perceived desirability become more discrepant, and the level of digital social entrepreneurial intention decreases toward both the left and right sides of the figure. However, an insignificant σ_3 indicates that the level of digital social entrepreneurial intention decreases correspondingly along the surface adjacent to the perfectly incongruent (PF = -PD) line in the right bottom of Fig. 4, signifying an increase in the imbalance between perceived feasibility and perceived desirability.

5. Discussion

By integrating the Entrepreneurial Event Model (EEM) with the Stimulus-Organism-Response (SOR) framework, our study examines how AI-driven stimuli—specifically, the adoption of ChatGPT in entrepreneurship and perceived AI competencies—shape individuals' cognitive processes (e.g., perceived feasibility and desirability). In turn, these cognitive factors influence their behavioral responses separately, synergistically, in alignment, or in misalignment (e.g., the intention to pursue digital social entrepreneurship).

Our study reveals a strong and positive relationship between ChatGPT adoption in entrepreneurship and both perceived feasibility and perceived desirability. These findings suggest that individuals who adopt ChatGPT for their future entrepreneurial ventures, such as acquiring essential entrepreneurial knowledge and information, perceive an increased sense of feasibility in solving societal problems via digital technologies. The advanced NLP capabilities of ChatGPT seem to enhance entrepreneurs' confidence in the practicality and execution of their business endeavors (Davidsson & Sufyan, 2023; Short & Short, 2023). Additionally, individuals who leverage ChatGPT find the idea of establishing their digital social enterprise more attractive. Its attractiveness can be attributed to the innovative features and capabilities that ChatGPT brings to entrepreneurship (Abaddi, 2023). Indeed, the innovative nature of ChatGPT's outputs, whether in the form of text, ideas, or solutions (Pham et al., 2024), may inspire and stimulate the entrepreneurial thought process (Short & Short, 2023). Potential entrepreneurs who adopt ChatGPT may find themselves equipped with novel perspectives and solutions to tackle societal challenges, fostering a sense of excitement and desirability in pursuing their digital social entrepreneurial endeavors. Although prior studies highlight the importance of ChatGPT in entrepreneurship (Abaddi, 2023; Short & Short, 2023). To

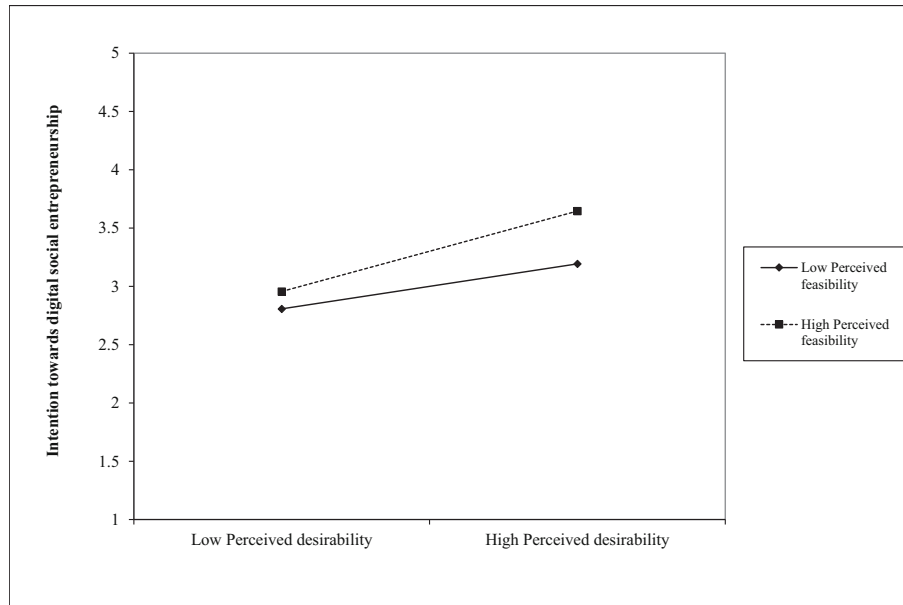


Fig. 3. Interaction effect of PD and PF on DSEI.

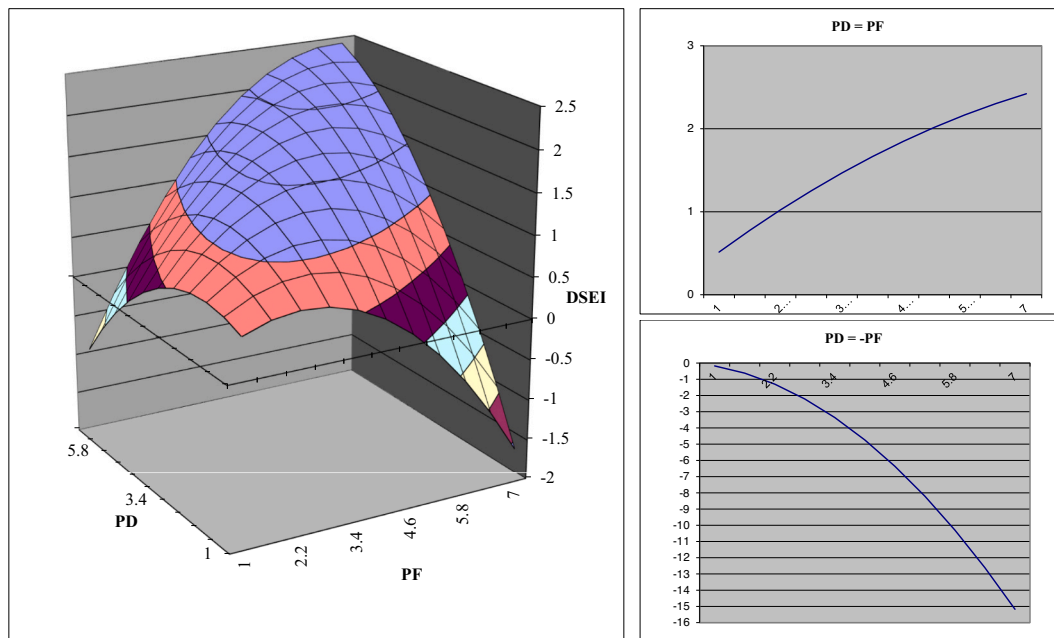


Fig. 4. Response surface for DSEI as predicted by PD and PF.

the best of our knowledge, no studies explain how ChatGPT adoption in entrepreneurship can be related to individuals' cognitive organisms (e. g., perceived feasibility and perceived desirability). Thus, these findings have important contributions to entrepreneurship literature.

Moreover, our study unravels that perceived AI capabilities are significantly and positively correlated with perceived feasibility and perceived desirability. Firstly, the positive relationship between perceived AI capabilities and perceived feasibility suggests that individuals who perceive AI as highly competent and capable are more likely to believe in the practical feasibility of integrating AI, such as ChatGPT, into their entrepreneurial activities to address social challenges. This may be attributed to the belief that advanced AI technologies can streamline processes, enhance decision-making, and contribute to the overall efficiency of entrepreneurial endeavors (Dabbous &

Boustani, 2023). The perceived capacities of AI, including problem-solving abilities and data processing speed, may instill confidence in entrepreneurs regarding the feasibility of leveraging AI tools like ChatGPT in their ventures (Elia et al., 2020; Yu et al., 2023). Secondly, the positive and strong relation between perceived AI capabilities and perceived desirability implies that potential social entrepreneurs view the adoption of AI as not only practically beneficial but also as an attractive and desirable feature in their social entrepreneurial activities (Gupta et al., 2023). This positive association may be influenced by the perception that incorporating AI adds a layer of sophistication and innovation to their social ventures. Entrepreneurs, perceiving AI as highly competent, may believe that integrating such technology aligns with contemporary trends and contributes to the overall appeal of their business initiatives (Upadhyay et al., 2021). AI's innovative outputs,

such as creative ideas or problem-solving solutions, may further enhance the desirability of entrepreneurial ventures.

Regarding the role of two core components in the EEM, our study indicates the positive relationships between perceived feasibility, perceived desirability, and intentions toward digital social entrepreneurship. These findings are consistent with some prior studies (Duong & Le, 2022; Esfandiar et al., 2019). It also means that when individuals perceive that integrating digital technologies is practically feasible for social entrepreneurship, it positively influences their intentions to participate in such endeavors actively. Additionally, the aspirational aspects captured by perceived desirability, such as the appeal of contributing to social causes through entrepreneurial actions, play a crucial role in motivating individuals to engage in digital social entrepreneurship (Ghatak et al., 2020). Our research shows that perceived feasibility and perceived desirability play significant roles in mediating the relationships between AI-driven stimuli, such as adopting ChatGPT in entrepreneurship, and perceived AI competencies, and digital social entrepreneurial intention within the SOR framework. These results suggest that when individuals feel that using ChatGPT and AI aligns with their values, goals, and skills, their sense of feasibility and desirability increases, which in turn motivates their intention to become digital social entrepreneurs.

The current study reveals that perceived desirability can interact with perceived feasibility to increase digital social entrepreneurial intention. The combined effect implies that the positive influence of perceived feasibility on digital social entrepreneurial intention is more pronounced when individuals not only perceive the feasibility of integrating using digital technologies to tackle societal challenges via social business venturing but also find the idea of participating in digital social entrepreneurship highly desirable. In other words, when perceived feasibility and perceived desirability align positively, individuals are more likely to exhibit stronger intentions to engage in digital social entrepreneurial activities. Furthermore, the findings provide valuable insights into the congruent impacts of perceived feasibility and perceived desirability on digital social entrepreneurial intention. This empirical evidence suggests that individuals are more inclined to commit to social entrepreneurial pursuits when they perceive a symbiotic relationship between the practical aspects and the desirable appeal of integrating digital technologies to tackle societal challenges (Ghatak et al., 2020; Saeed et al., 2014). This balance signifies that individuals recognize the tangible and feasible aspects of leveraging technology-driven solutions for social entrepreneurship and resonate with the desirable and aspirational dimensions inherent in these endeavors. Conversely, when individuals perceive a substantial misalignment or discrepancy between the feasibility and desirability of integrating digital technologies into their social entrepreneurial endeavors, there is a more pronounced decline in their intentions toward digital social entrepreneurship.

6. Conclusion

6.1. Theoretical contributions

The current study makes significant theoretical contributions by addressing a notable research gap in the entrepreneurial literature pertaining to the exploring the relationship between AI adoption and digital social entrepreneurship. Despite the widespread recognition of AI's transformative potential in driving innovation and disruption (Abaddi & Al-Shboul, 2023; Roundy, 2022; Upadhyay et al., 2021), a discernible gap persists in understanding the foundational dynamics of integrating AI into the entrepreneurial literature (Short & Short, 2023). Our research aims to bridge this gap by integrating the EEM within the SOR theory to explore how AI-driven stimuli influence individuals' digital social entrepreneurial intentions through a mediation mechanism of perceived feasibility and perceived desirability. The first critical theoretical contribution lies in effectively integrating the EEM within

the SOR framework to elucidate individuals' intentions to become digital social entrepreneurs. This integration offers a comprehensive conceptual model that goes beyond the mere acknowledgment of AI's potential, providing insight into the cognitive processes and stimuli that influence entrepreneurial decision-making. By amalgamating these theoretical perspectives, our study enriches our extant knowledge of the linkage between external stimuli (AI drivers), cognitive organisms (two core constructs in the EEM), and behavioral responses (digital social entrepreneurial intention) in the context of digital social entrepreneurship.

Secondly, the current study advances theoretical perspectives on how AI-driven stimuli, specifically ChatGPT adoption in entrepreneurship and perceived AI competencies, shape individuals' cognitive organisms. By exploring the aspirational facets of perceived feasibility and perceived desirability, the research delves into the cognitive mechanisms through which AI-related drivers stimulate individuals' digital social entrepreneurial intention. This contributes valuable insights into the complicated links between AI-driven stimuli, cognitive processes, and individuals' intention to become digital social entrepreneurs, shedding light on the AI-driven and motivational factors that drive social entrepreneurial intentions in the digital age. Moreover, the current study addresses the lacuna in understanding the complementarity, congruence, and incongruence between two core constructs in the EEM, namely perceived feasibility and perceived desirability. This exploration of the curvilinear impacts of these cognitive elements on individuals' behavioral responses (i.e., digital social entrepreneurial intention), provides an understanding of the complex dynamics at play. It contributes to the theoretical underpinnings of how the alignment or misalignment of cognitive perceptions influences digital social entrepreneurial intentions, offering a more holistic perspective on digital social start-up decision-making processes.

6.2. Practical implications

The practical implications drawn from this study's findings are significant, particularly for students, educators, and mentors engaged in digital social entrepreneurship and entrepreneurship education.

For potential social entrepreneurs, the positive relationships between ChatGPT adoption, perceived feasibility, and perceived desirability highlight the importance of digital tools in enhancing the appeal and practicality of launching social ventures. Social entrepreneurs can utilize ChatGPT's capabilities to enhance communication, streamline operations, and improve decision-making. This study suggests that integrating AI tools, such as ChatGPT, can simultaneously address operational efficiency and personal motivation in tackling societal challenges, thereby reinforcing both the feasibility and desirability of these approaches. By positioning themselves as tech-savvy and innovative, potential social entrepreneurs can increase the attractiveness of their ventures to investors, partners, and broader communities.

For educators and higher education institutions, the findings provide valuable insights into fostering student entrepreneurs' intentions toward digital social entrepreneurship. Since the research sample primarily consisted of higher education students, the results highlight the urgent need for educational institutions to integrate AI literacy and entrepreneurship competencies into their curricula. Aligned with Winkler et al. (2023), we emphasize that generative AI should be seen not only as a tool but as a transformative force reshaping entrepreneurship education. Institutions should focus on embedding hands-on experiences with AI tools, such as ChatGPT, and encourage project-based learning that allows students to apply AI in identifying opportunities, designing solutions, and creating social ventures. Furthermore, innovation hubs and AI labs within universities can serve as collaborative environments where interdisciplinary teams experiment with AI technologies for societal impact.

Educators must also reframe their teaching practices to emphasize the entrepreneurial skills needed in an AI-driven landscape, including

critical thinking, creativity, adaptive learning, and ethical decision-making. Following Winkler et al. (2023), entrepreneurship education must adapt to position AI as both a co-creator in learning and a critical tool that requires responsible engagement. Through reflective practice, educators can help students critically assess the potential and ethical challenges of AI, rather than relying on it uncritically. Mentorship programs pairing students with experienced entrepreneurs familiar with AI applications could further bridge the gap between theoretical learning and practical implementation. Educators and mentors are encouraged to foster a reflective and critical approach to AI use, helping student entrepreneurs leverage AI not only for efficiency but also for developing socially responsible and innovative ventures.

6.3. Shortcomings and suggestions for further research

Although this study makes noteworthy contributions to the fields of social digital entrepreneurship and AI adoption, it is essential to acknowledge certain limitations that may impact the broader applicability of the results.

First, the utilization of a cross-sectional design in this study, while valuable for capturing a snapshot of relationships among variables, introduces a notable limitation concerning establishing causal relationships (Ngo et al., 2024). Cross-sectional designs provide a static perspective, making it challenging to discern the directionality of the observed associations. To address this limitation, future research endeavors should consider adopting longitudinal designs. By capturing changes and developments in perceptions of feasibility, desirability, and entrepreneurial intentions, longitudinal designs offer a more understanding of the temporal aspects of the entrepreneurial decision-making process. Second, the reliance on ChatGPT adoption as a stimulus in this study may create the perception of circularity, as entrepreneurial intentions could eventually lead to startup creation (an outcome), rather than ChatGPT adoption acting solely as a stimulus. To address this limitation, future research should explore the adoption of ChatGPT and other generative AI tools as part of broader technology diffusion processes, rather than framing them exclusively as initial stimuli that influence individual cognitive mechanisms. This approach would better capture the dynamic and multi-faceted interactions between AI adoption, entrepreneurial ecosystems, and individual decision-making processes.

Third, the composition of the study's sample, which is primarily comprised of higher education students from specific regions within Vietnam's geographic scope, raises concerns about the generalizability of the findings. While the use of students provides valuable insights into potential future entrepreneurs, it may not fully capture the motivations and intentions of individuals with specific entrepreneurial aspirations or those currently engaged in entrepreneurial activities. Enhancing the external validity of forthcoming research endeavors can be achieved by diversifying samples to incorporate potential entrepreneurs from diverse industry sectors, geographic locations, and levels of entrepreneurial experience. This expanded representation is crucial for fostering a more comprehensive understanding of the complex relationship between AI adoption and entrepreneurial intentions across various contexts. Finally, the research's concentration on specific AI-driven stimuli, particularly ChatGPT adoption and perceived AI competencies, may inadvertently neglect other pertinent stimuli that could significantly impact digital social entrepreneurship. To enhance the depth of insights into entrepreneurial decision-making processes, it is recommended that future research endeavors extend their scope to include a broader array of AI-related stimuli. Exploring a more diverse set of stimuli will contribute to a more comprehensive understanding of the multifaceted factors influencing individuals' intentions and behaviors in digital social entrepreneurship.

CRedit authorship contribution statement

Cong Doanh Duong: Visualization, Conceptualization, Writing – review & editing, Supervision, Writing – original draft, Project administration, Formal analysis. **Van Loi Ta:** Project administration, Formal analysis, Writing – review & editing, Supervision, Validation, Methodology, Writing – original draft. **Thanh Hieu Nguyen:** Resources, Funding acquisition, Methodology, Investigation, Software, Formal analysis, Validation.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

References

- Abaddi, S. (2023). GPT revolution and digital entrepreneurial intentions. *Journal of Entrepreneurship in Emerging Economies*, 16(6), 1903–1930. <https://doi.org/10.1108/jee-07-2023-0260>
- Abaddi, S., & Al-Shboul, M. D. A. (2023). "Revealing the hidden" – Challenges facing early digital entrepreneurs in Jordan. *Management & Sustainability: An Arab Review*, 3(1), 69–88. <https://doi.org/10.1108/msar-02-2023-0011>
- Abdelfattah, F., Al Halbusi, H., & Al-Brwani, R. M. (2022). Influence of self-perceived creativity and social media use in predicting E-entrepreneurial intention. *International Journal of Innovation Studies*, 6(3), 119–127. <https://doi.org/10.1016/j.ijis.2022.04.003>
- Adam, A. F., & Fayolle, A. (2015). Bridging the entrepreneurial intention-behaviour gap: The role of commitment and implementation intention. *International Journal of Entrepreneurship and Small Business*, 25(1). <https://doi.org/10.1504/ijesb.2015.068775>
- Ahuja, V., Akhtar, A., & Wali, O. P. (2019). Development of a comprehensive model of social entrepreneurial intention formation using a quality tool. *Journal of Global Entrepreneurship Research*, 9(1). <https://doi.org/10.1186/s40497-019-0164-4>
- Al Halbusi, H., Soto-Acosta, P., & Popa, S. (2024). Entrepreneurial passion, role models and self-perceived creativity as antecedents of e-entrepreneurial intention in an emerging Asian economy: The moderating effect of social media. *Asia Pacific Journal of Management*, 41(3), 1253–1284. <https://doi.org/10.1007/s10490-022-09857-2>
- Al Najem, R., & de Vré, M. (2023). *AI unleashed: The future of social entrepreneurship : A relational view on the intricacies between AI and social entrepreneurship*. Student thesis. DiVA <http://urn.kb.se/resolve?urn=urn:nbn:se:umu:diva-210297>.
- Ambad, S. N. A., & Rafiki, A. (2025). The roles of vocational interest and entrepreneurial event model in agropreneurship intention. *Journal of Entrepreneurship in Emerging Economies*, 17(2), 394–417. <https://doi.org/10.1108/JEEE-12-2023-0516>
- Anwar, I., Ahmad, A., Saleem, I., & Yasin, N. (2023). Role of entrepreneurship education, passion and motivation in augmenting Omani students' entrepreneurial intention: A stimulus-organism-response approach. *The international. Journal of Management Education*, 21(3). <https://doi.org/10.1016/j.ijme.2023.100842>
- Bachmann, N., Rose, R., Maul, V., & Hölzle, K. (2024). What makes for future entrepreneurs? The role of digital competencies for entrepreneurial intention. *Journal of Business Research*, 174. <https://doi.org/10.1016/j.jbusres.2023.114481>
- Bacq, S., & Janssen, F. (2011). The multiple faces of social entrepreneurship: A review of definitional issues based on geographical and thematic criteria. *Entrepreneurship & Regional Development*, 23(5–6), 373–403. <https://doi.org/10.1080/08985626.2011.577242>
- Barbouditis, G., & Stiakakis, E. (2023). Identifying the factors to enhance digital competence of students at vocational training institutes. *Technology, Knowledge and Learning*, 28(2), 613–650. <https://doi.org/10.1007/s10758-023-09641-1>
- Battisti, S. (2019). Digital social entrepreneurs as bridges in public-private partnerships. *Journal of Social Entrepreneurship*, 10(2), 135–158. <https://doi.org/10.1080/19420676.2018.1541006>
- Bergholz, C., Füner, L., Lubczyk, M., Sternberg, R., & Bersch, J. (2024). Infrastructure required, skill needed: Digital entrepreneurship in rural and urban areas. *Journal of Business Venturing Insights*, 22. <https://doi.org/10.1016/j.jbvi.2024.e00488>
- Bonfanti, A., De Crescenzo, V., Simeoni, F., & Loza Adau, C. R. (2024). Convergences and divergences in sustainable entrepreneurship and social entrepreneurship research: A systematic review and research agenda. *Journal of Business Research*, 170. <https://doi.org/10.1016/j.jbusres.2023.114336>
- Bui, T. H., & Nguyen, V. P. (2023). The impact of artificial intelligence and digital economy on Vietnam's legal system. *International Journal for the Semiotics of Law*, 36(2), 969–989. <https://doi.org/10.1007/s11196-022-09927-0>
- Canestrino, R., Cwiklicki, M., Magliocca, P., & Pawelek, B. (2020). Understanding social entrepreneurship: A cultural perspective in business research. *Journal of Business Research*, 110, 132–143. <https://doi.org/10.1016/j.jbusres.2020.01.006>

- Chahal, J., Dagar, V., Dagher, L., Rao, A., & Udemba, E. N. (2023). The crisis effect in TPB as a moderator for post-pandemic entrepreneurial intentions among higher education students: PLS-SEM and ANN approach. *The International Journal of Management Education*, 21(3), Article 100878. <https://doi.org/10.1016/j.ijme.2023.100878>
- Chalmers, D., MacKenzie, N. G., & Carter, S. (2021). Artificial intelligence and entrepreneurship: Implications for venture creation in the fourth industrial revolution. *Entrepreneurship Theory and Practice*, 45(5), 1028–1053. <https://doi.org/10.1177/1042258720934581>
- Chatterjee, I., Cornelissen, J., & Wincent, J. (2021). Social entrepreneurship and values work: The role of practices in shaping values and negotiating change. *Journal of Business Venturing*, 36(1), Article 106064. <https://doi.org/10.1016/j.jbusvent.2020.106064>
- Chebo, A. K., & Dhliwayo, S. (2024). Scientific mapping and thematic progression of digitalization of social entrepreneurship in developing countries. *Sustainable Futures*, 7, Article 100153. <https://doi.org/10.1016/j.sfsr.2024.100153>
- Chen, Y., Liu, H., & Chen, M. (2022). Achieving novelty and efficiency in business model design: Striking a balance between IT exploration and exploitation. *Information & Management*, 59(3). <https://doi.org/10.1016/j.im.2020.103268>
- Chiengkul, W., Tantiphanichkul, T., Boonchom, W., Phuangpornpitak, W., & Suphan, K. (2023). Social entrepreneurship of small and medium-sized entrepreneurs in Thailand: Influence of institutional environment, entrepreneurial passions, and entrepreneurial self-efficacy. *Social Enterprise Journal*. <https://doi.org/10.1108/sej-01-2023-0005>
- Christmann, A., & Van Aelst, S. (2006). Robust estimation of Cronbach's alpha. *Journal of Multivariate Analysis*, 97(7), 1660–1674. <https://doi.org/10.1016/j.jmva.2005.05.012>
- Crumbley, J., Pal, R., & Altay, N. (2025). A classification framework for generative artificial intelligence for social good. *Technovation*, 139. <https://doi.org/10.1016/j.technovation.2024.103129>
- Dabbous, A., & Boustani, N. M. (2023). Digital explosion and entrepreneurship education: Impact on promoting entrepreneurial intention for business students. *Journal of Risk and Financial Management*, 16(1). <https://doi.org/10.3390/jrfm16010027>
- Davidsson, P., & Sufyan, M. (2023). What does AI think of AI as an external enabler (EE) of entrepreneurship? An assessment through and of the EE framework. *Journal of Business Venturing Insights*, 20, 1–12. <https://doi.org/10.1016/j.jbvi.2023.e00413>
- Do, M. N. (2022). The key for success in the value chain of a social entrepreneur in Vietnam. *Journal of Enterprising Communities: People and Places in the Global Economy*, 17(6), 1193–1208. <https://doi.org/10.1108/jec-01-2022-0019>
- Duong, C. D. (2023). Applying the stimulus-organism-response theory to investigate determinants of students' social entrepreneurship: Moderation role of perceived university support. *Social Enterprise Journal*, 19(2), 167–192. <https://doi.org/10.1108/SEJ-10-2022-0091>
- Duong, C. D. (2024). What makes for digital entrepreneurs? The role of AI-related drivers for nascent digital start-up activities. *European Journal of Innovation Management*. <https://doi.org/10.1108/ejim-02-2024-0154>
- Duong, C. D. (2025). How AI-enabled drivers inspire sustainability-oriented entrepreneurial intentions: Unraveling the (in)congruent effects of perceived desirability and feasibility from the entrepreneurial event model perspective. *Sustainable Development*. <https://doi.org/10.1002/sd.3461>
- Duong, C. D., & Le, T. L. (2022). ADHD symptoms and entrepreneurial intention among Vietnamese college students: An empirical study. *Journal of Entrepreneurship in Emerging Economies*, 14(3), 495–522. <https://doi.org/10.1108/JEEE-02-2021-0049>
- Duong, C. D., Vu, T. N., & Ngo, T. V. N. (2023). Applying a modified technology acceptance model to explain higher education students' usage of ChatGPT: A serial multiple mediation model with knowledge sharing as a moderator. *The International Journal of Management Education*, 21(3), 1–18. <https://doi.org/10.1016/j.ijme.2023.100883>
- Duong, H. L., Tran, M. T., Vo, T. K. O., & Tran, T. K. C. (2024). Social media and privacy concerns: Exploring university student's privacy concerns in TikTok platform in Vietnam. *Journal of Information, Communication and Ethics in Society*, 22(4), 392–418. <https://doi.org/10.1108/JICES-04-2024-0045>
- Elia, G., Margherita, A., & Passiante, G. (2020). Digital entrepreneurship ecosystem: How digital technologies and collective intelligence are reshaping the entrepreneurial process. *Technological Forecasting and Social Change*, 150. <https://doi.org/10.1016/j.techfore.2019.119791>
- Esfandiar, K., Sharifi-Tehrani, M., Pratt, S., & Altinay, L. (2019). Understanding entrepreneurial intentions: A developed integrated structural model approach. *Journal of Business Research*, 94, 172–182. <https://doi.org/10.1016/j.jbusres.2017.10.045>
- Fox, C. J., Muldoon, J., & Davis, P. E. (2023). Social entrepreneurial intention: Examining the impacts of social and institutional support. *Journal of Business Research*, 164, Article 114036. <https://doi.org/10.1016/j.jbusres.2023.114036>
- Gao, B., Wang, Y., Xie, H., Hu, Y., & Hu, Y. (2023). Artificial intelligence in advertising: Advancements, challenges, and ethical considerations in targeting, personalization, content creation, and ad optimization. *SAGE Open*, 13(4). <https://doi.org/10.1177/21582440231210759>
- Geradts, T. H. J., & Alt, E. (2022). Social entrepreneurial action in established organizations: Developing the concept of social intrapreneurship. *Journal of Business Research*, 151, 197–206. <https://doi.org/10.1016/j.jbusres.2022.06.047>
- Ghatak, A., Chatterjee, S., & Bhowmick, B. (2020). Intention towards digital social entrepreneurship: An integrated model. *Journal of Social Entrepreneurship*, 14(2), 131–151. <https://doi.org/10.1080/19420676.2020.1826563>
- Giuggioli, G., & Pellegrini, M. M. (2022). Artificial intelligence as an enabler for entrepreneurs: A systematic literature review and an agenda for future research. *International Journal of Entrepreneurial Behavior & Research*, 29(4), 816–837. <https://doi.org/10.1108/ijeb-05-2021-0426>
- Graham, B., & Bonner, K. (2024a). The role of institutions in early-stage entrepreneurship: An explainable artificial intelligence approach. *Journal of Business Research*, 175, Article 114567. <https://doi.org/10.1016/j.jbusres.2024.114567>
- Graham, B., & Bonner, K. (2024b). The role of institutions in early-stage entrepreneurship: An explainable artificial intelligence approach. *Journal of Business Research*, 175. <https://doi.org/10.1016/j.jbusres.2024.114567>
- Gupta, B. B., Gaurav, A., Panigrahi, P. K., & Arya, V. (2023). Analysis of artificial intelligence-based technologies and approaches on sustainable entrepreneurship. *Technological Forecasting and Social Change*, 186, 1–9. <https://doi.org/10.1016/j.techfore.2022.122152>
- Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). Evaluation of reflective measurement models. In J. F. Hair, Jr., G. T. M. Hult, C. M. Ringle, M. Sarstedt, N. P. Danks, & S. Ray (Eds.), *Partial least squares structural equation MODELING (PLS-SEM) using R: A workbook* (pp. 75–90). Springer International Publishing. https://doi.org/10.1007/978-3-030-80519-7_4
- Hao, X., Demir, E., & Eysers, D. (2024). Exploring collaborative decision-making: A quasi-experimental study of human and generative AI interaction. *Technology in Society*, 78, Article 102662. <https://doi.org/10.1016/j.techsoc.2024.102662>
- Haq, M. D. U., Tseng, T.-H., Cheng, H.-L., & Chiu, C.-M. (2024). An empirical analysis of eWOM valence effects: Integrating stimulus-organism-response, trust transfer theory, and theory of planned behavior perspectives. *Journal of Retailing and Consumer Services*, 81, Article 104026. <https://doi.org/10.1016/j.jretconser.2024.104026>
- Hung, N. T. (2023). Green investment, financial development, digitalization and economic sustainability in Vietnam: Evidence from a quantile-on-quantile regression and wavelet coherence. *Technological Forecasting and Social Change*, 186. <https://doi.org/10.1016/j.techfore.2022.122185>
- Huy, P. Q., Shavkatovich, S. N., Abdul-Samad, Z., Agrawal, D. K., Ashifa, K. M., & Arumugam, M. (2023). Resource management projects in entrepreneurship and retain customer based on big data analysis and artificial intelligence. *The Journal of High Technology Management Research*, 34(2), 1–11. <https://doi.org/10.1016/j.hitech.2023.100471>
- Ibanez, M. J., Guerrero, M., Yanez-Valdes, C., & Barros-Celume, S. (2022). Digital social entrepreneurship: The N-Helix response to stakeholders' COVID-19 needs. *The Journal of Technology Transfer*, 47(2), 556–579. <https://doi.org/10.1007/s10961-021-09855-4>
- Jiang, Y. (2024). Childhood financial difficulty and entrepreneurial intention: The roles of work-family conflict and openness to experience. *Journal of Business Research*, 175. <https://doi.org/10.1016/j.jbusres.2024.114559>
- Kanbach, D. K., Heiduk, L., Blueher, G., Schreiter, M., & Lahmann, A. (2024). The GenAI is out of the bottle: Generative artificial intelligence from a business model innovation perspective. *Review of Managerial Science*, 18(4), 1189–1220. <https://doi.org/10.1007/s11846-023-00696-z>
- Karlidag-Dennis, E., Hazenberg, R., & Dinh, A.-T. (2020). Is education for all? The experiences of ethnic minority students and teachers in North-Western Vietnam engaging with social entrepreneurship. *International Journal of Educational Development*, 77. <https://doi.org/10.1016/j.ijedudev.2020.102224>
- Kim, E., Jang, G.-Y., & Kim, S.-H. (2022). How to apply artificial intelligence for social innovations. *Applied Artificial Intelligence*, 36(1). <https://doi.org/10.1080/08839514.2022.2031819>
- Kruse, D. J., Eling, K., & Herstatt, C. (2025). How social entrepreneurs search for knowledge to solve complex social problems – An empirically based model and typology. *Journal of Business Research*, 194, Article 115374. <https://doi.org/10.1016/j.jbusres.2025.115374>
- Liu, A., & Wang, S. (2024). Generative artificial intelligence (GenAI) and entrepreneurial performance: Implications for entrepreneurs. *The Journal of Technology Transfer*, 49(6), 2389–2412. <https://doi.org/10.1007/s10961-024-10132-3>
- Lopes, J. M., Suchek, N., & Gomes, S. (2023). The antecedents of sustainability-oriented entrepreneurial intentions: An exploratory study of Angolan higher education students. *Journal of Cleaner Production*, 391. <https://doi.org/10.1016/j.jclepro.2023.136236>
- Mariani, M., & Dwivedi, Y. K. (2024). Generative artificial intelligence in innovation management: A preview of future research developments. *Journal of Business Research*, 175. <https://doi.org/10.1016/j.jbusres.2024.114542>
- Masiero, S., & Ravishankar, M. N. (2018). Digital social entrepreneurship: Balancing social and commercial goals in an Indian 'fintech' organisation. https://repository.lboro.ac.uk/articles/conference_contribution/Digital_social_entrepreneurship_Balancing_social_and_commercial_goals_in_an_Indian_fintech_organisation/9497237
- Mehrabian, A., & Russell, J. (1974). *An approach to environmental psychology*. Cambridge, MA: MIT Press.
- Min, H., Park, J., & Kim, H. J. (2016). Common method bias in hospitality research: A critical review of literature and an empirical study. *International Journal of Hospitality Management*, 56, 126–135. <https://doi.org/10.1016/j.ijhm.2016.04.010>
- Moro-Visconti, R., Cruz Rambaud, S., & López Pascual, J. (2023). Artificial intelligence-driven scalability and its impact on the sustainability and valuation of traditional firms. *Humanities and Social Sciences Communications*, 10(1). <https://doi.org/10.1057/s41599-023-02214-8>
- Nakpodia, F., Ashiru, F., You, J. J., & Oni, O. (2023). Digital technologies, social entrepreneurship and resilience during crisis in developing countries: Evidence from Nigeria. *International Journal of Entrepreneurial Behavior and Research*. <https://doi.org/10.1108/ijeb-01-2023-0012>
- Ngo, Q. D., Tran, T. V. H., & Hoang, V. H. (2024). Anticipating prosperity: A systemic analysis of long-term economic trajectories. *Journal of Economics and Development*, 27(1), 4–21. <https://doi.org/10.1108/JED-08-2024-0299>

- Nguyen, M. H. T., Carr, S. C., Hodgetts, D., & Fauchart, E. (2021). Why do some social enterprises flourish in Vietnam? A comparison of human and ecosystem partnerships. *Sustainability Accounting, Management and Policy Journal*, 12(6), 1312–1347. <https://doi.org/10.1108/sampj-04-2020-0137>
- Nguyen, P. N.-D., & Nguyen, H. H. (2024). Examining the role of family in shaping digital entrepreneurial intentions in emerging markets. *SAGE Open*, 14(1). <https://doi.org/10.1177/21582440241239493>
- Nguyen, T. T., Dao, T. T., Tran, T. B., Nguyen, H. T. T., Le, L. T. N., & Pham, N. T. T. (2024). Fintech literacy and digital entrepreneurial intention: Mediator and moderator effect. *International Journal of Information Management Data Insights*, 4(1). <https://doi.org/10.1016/j.jjime.2024.100222>
- Nwosu, H. E., Obidike, P. C., Ugwu, J. N., Udeze, C. C., & Okolie, U. C. (2022). Applying social cognitive theory to placement learning in business firms and students' entrepreneurial intentions. *The International Journal of Management Education*, 20(1). <https://doi.org/10.1016/j.ijme.2022.100602>
- Ozgen, E., & Baron, R. A. (2007). Social sources of information in opportunity recognition: Effects of mentors, industry networks, and professional forums. *Journal of Business Venturing*, 22(2), 174–192. <https://doi.org/10.1016/j.jbusvent.2005.12.001>
- Paul, J., Alhassan, I., Binsaif, N., & Singh, P. (2023). Digital entrepreneurship research: A systematic review. *Journal of Business Research*, 156. <https://doi.org/10.1016/j.jbusres.2022.113507>
- Pham, H. C., Duong, C. D., & Nguyen, G. K. H. (2024). What drives tourists' continuance intention to use ChatGPT for travel services? A stimulus-organism-response perspective. *Journal of Retailing and Consumer Services*, 78. <https://doi.org/10.1016/j.jretconser.2024.103758>
- Pham Tra, L., & Dau Thi Kim, T. (2024). Digital competence of students in higher education: An assessment framework in Vietnam. *Asian Education and Development Studies*, 13(5), 473–487. <https://doi.org/10.1108/AEDS-04-2024-0080>
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879–903. <https://doi.org/10.1037/0021-9010.88.5.879>
- Popkova, E. G., & Sergi, B. S. (2020). Human capital and AI in industry 4.0. Convergence and divergence in social entrepreneurship in Russia. *Journal of Intellectual Capital*, 21(4), 565–581. <https://doi.org/10.1108/jic-09-2019-0224>
- Roundy, P. T. (2022). Artificial intelligence and entrepreneurial ecosystems: Understanding the implications of algorithmic decision-making for startup communities. *Journal of Ethics in Entrepreneurship and Technology*, 2(1), 23–38. <https://doi.org/10.1108/jeet-07-2022-0011>
- Saeed, S., Muffatto, M., & Yousafzai, S. Y. (2014). Exploring intergenerational influence on entrepreneurial intention: The mediating role of perceived desirability and perceived feasibility. *International Journal of Entrepreneurship and Innovation Management*, 18(2/3). <https://doi.org/10.1504/ijeim.2014.062877>
- Shapiro, A., & Sokol, L. (1982). The social dimensions of entrepreneurship. In C. Kent, D. Sexton, & K. V. Vesper (Eds.), *The Encyclopedia of entrepreneurship* (pp. 72–90). Englewood Cliffs: Prentice Hall.
- Short, C. E., & Short, J. C. (2023). The artificially intelligent entrepreneur: ChatGPT, prompt engineering, and entrepreneurial rhetoric creation. *Journal of Business Venturing Insights*, 19, 1–10. <https://doi.org/10.1016/j.jbvi.2023.e00388>
- Shukla, A., Kushwah, P., Jain, E., & Sharma, S. K. (2021). Role of ICT in emancipation of digital entrepreneurship among new generation women. *Journal of Enterprising Communities: People and Places in the Global Economy*, 15(1), 137–154. <https://doi.org/10.1108/jec-04-2020-0071>
- Sottini, A., Ciambotti, G., & Littlewood, D. (2022). Engaging symbiotic ecosystems to build community centred business models for the BoP: Evidence from small social enterprises in East Africa. *International Small Business Journal*, 40(8), 935–965. <https://doi.org/10.1177/02662426211059778>
- Sufyan, M., Degbey, W. Y., Glavee-Geo, R., & Zoogah, B. D. (2023). Transnational digital entrepreneurship and enterprise effectiveness: A micro-foundational perspective. *Journal of Business Research*, 160. <https://doi.org/10.1016/j.jbusres.2023.113802>
- Tran, V. T., Nguyen, T. H., St-Jean, É., Duong, C. D., & Trinh, T. N. (2023). Social entrepreneurial intention among youth in Vietnam: The roles of prior experience and perceived educational support. *Journal of Social Entrepreneurship*, 1–29. <https://doi.org/10.1080/19420676.2023.2244985>
- Tran, V. T., Pham, T. T. H., Le, T. L., Dinh, T. H., & Pham, T. T. H. (2024). FinTech knowledge as drivers of higher education students' FinTech entrepreneurial intentions: Insights from stimulus-organism-response theory. *The International Journal of Management Education*, 22(3). <https://doi.org/10.1016/j.ijme.2024.101027>
- Tsai, S.-B., Cheng, X., Yang, Y., Xiong, J., & Zarifis, A. (2024). The social-technological ways to develop digital entrepreneurship: Targeting value creation and value capture. *Information Processing & Management*, 61(1). <https://doi.org/10.1016/j.ipm.2023.103568>
- Upadhyay, N., Upadhyay, S., & Dwivedi, Y. K. (2021). Theorizing artificial intelligence acceptance and digital entrepreneurship model. *International Journal of Entrepreneurial Behavior & Research*, 28(5), 1138–1166. <https://doi.org/10.1108/ijeb-01-2021-0052>
- Van Tam, N., Toan, N. Q., & Van Phong, V. (2024). Investigating potential barriers to construction digitalization in emerging economies: A study in Vietnam. *International Journal of Information Management Data Insights*, 4(1). <https://doi.org/10.1016/j.jjime.2024.100226>
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly: Management Information Systems*, 27(3), 425–478. <https://doi.org/10.2307/30036540>
- Virmani, N., Sharma, S., Kumar, A., & Luthra, S. (2023). Adoption of industry 4.0 evidence in emerging economy: Behavioral reasoning theory perspective. *Technological Forecasting and Social Change*, 188. <https://doi.org/10.1016/j.techfore.2023.122317>
- Walsh, J., Nguyen, T. Q., & Hoang, T. (2023). Digital transformation in Vietnamese SMEs: Managerial implications. *Journal of Internet and Digital Economics*, 3(1/2), 18–32. <https://doi.org/10.1108/jide-09-2022-0018>
- Wang, S., & Zhang, H. (2024). Green entrepreneurship success in the age of generative artificial intelligence: The interplay of technology adoption, knowledge management, and government support. *Technology in Society*, 79. <https://doi.org/10.1016/j.techsoc.2024.102744>
- Webometrics. (2023). Ranking web of Vietnam Universities. <https://www.webometrics.info/en/asia/vietnam>
- Winkler, C., Hammada, B., Noyes, E., & Van Gelderen, M. (2023). Entrepreneurship education at the dawn of generative artificial intelligence. *Entrepreneurship Education and Pedagogy*, 6(4), 579–589. <https://doi.org/10.1177/25151274231198799>
- Yáñez-Valdés, C., Guerrero, M., Barros-Celume, S., & Ibáñez, M. J. (2023). Winds of change due to global lockdowns: Refreshing digital social entrepreneurship research paradigm. *Technological Forecasting and Social Change*, 190. <https://doi.org/10.1016/j.techfore.2023.122454>
- Yao, R., Ye, Y., Zhang, J., Li, S., & Wu, O. (2023). Exploring developments of the AI field from the perspective of methods, datasets, and metrics. *Information Processing & Management*, 60(2). <https://doi.org/10.1016/j.ipm.2022.103157>
- Yu, H., Zhang, R., & Kim, C. (2023). Intelligent analysis system of college students' employment and entrepreneurship situation: Big data and artificial intelligence-driven approach. *Computers and Electrical Engineering*, 110. <https://doi.org/10.1016/j.compeleceng.2023.108823>
- Zaremozhzabieh, Z., Samah, B. A., Muhammad, M., Omar, S. Z., Bolong, J., Hassan, S. B. H., & Mohamed Shaffril, H. A. (2016). Information and communications technology acceptance by youth entrepreneurs in rural Malaysian communities: The mediating effects of attitude and entrepreneurial intention. *Information Technology for Development*, 22(4), 606–629. <https://doi.org/10.1080/02681102.2015.1128384>